J. BELAVANCE.

SELVAGE MOTION FOR LOOMS.

APPLICATION FILED MAR. 27, 1908.

913,095. Patented Feb. 23, 1909.

Fig. 2.

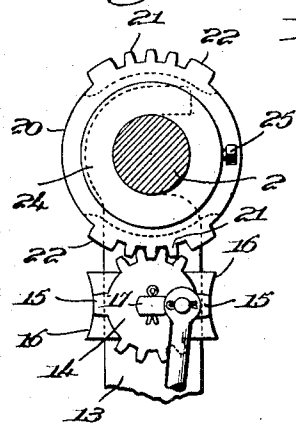


Fig. 1.

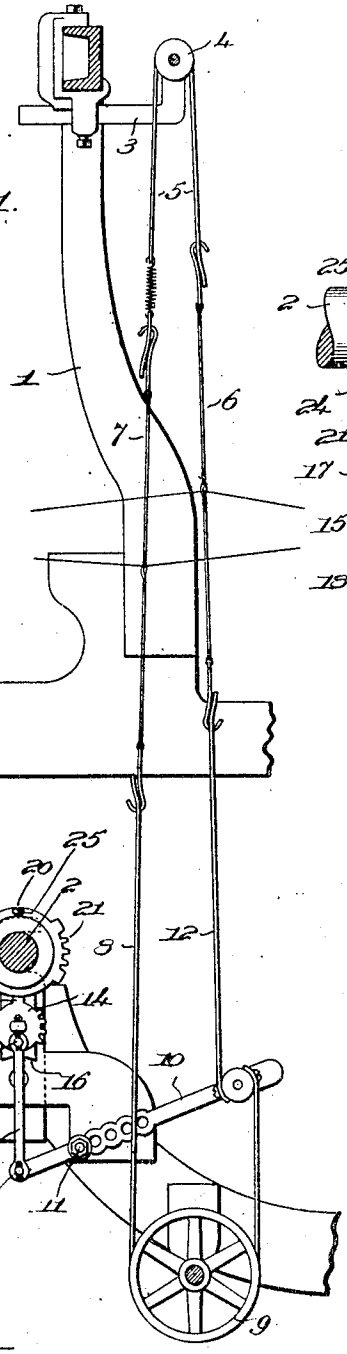


Fig. 3.

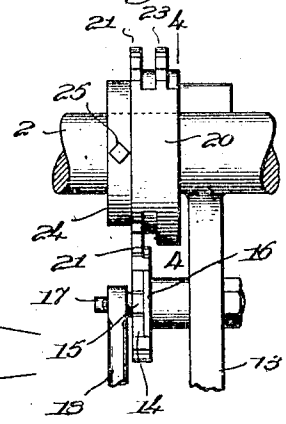
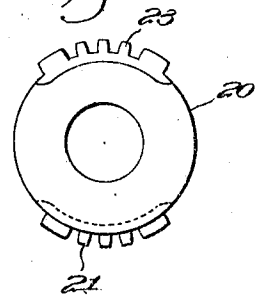


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SELVAGE-MOTION FOR LOOMS.

No. 913,095. Specification of Letters Patent. Patented Feb. 23, 1909.

Application filed March 27, 1908. Serial No. 423,511.

To all whom it may concern:

Be it known that I, JOSEPH BELAVANCE, a citizen of the United States, and resident of Webster, county of Worcester, State of Massachusetts, have invented an Improvement in Selvage-Motions for Looms, of which the following description, in connection with the accompanying drawing, is a specification, like numerals on the drawing representing like parts.

This invention has for its object the production of a simple selvage-motion for looms so constructed and arranged that either a plain or a tape selvage may be woven without necessitating a complete change and setting of the actuating means.

As is well known to those skilled in the art a plain selvage is woven by raising each selvage-harness one pick and lowering it the following pick, while a tape or basket selvage is made by giving to each of the selvage-harnesses the two up, two down movement.

My present invention is of the class wherein two selvage harnesses are located at each side of the loom, the selvage-motion being separate from the main shed-forming instrumentality, and as the selvage mechanism at one side of the loom is the same as that at the other side and has its own actuating means I have herein illustrated but one of such mechanisms and its actuating means.

The two selvage-harnesses of a pair are suitably connected to reciprocate oppositely, and the actuator for each pair is so constructed that by bodily shifting it from one to another position, to act through a common transmitter, the selvage-harnesses are caused to weave plain or tape selvage.

The novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a transverse section of a portion of a loom showing at one side of the loom a selvage-forming mechanism embodying my invention, set for weaving plain selvage; Fig. 2 is an enlarged detail view of one of the actuators and the transmitting member by means of which motion is imparted to the selvage-harnesses, showing the tape selvage portion of the actuator; Fig. 3 is a front elevation of the parts shown in Fig. 2, looking toward the left; Fig. 4 is a sectional detail on the line 4—4, Fig. 3, looking to the left, to show more clearly the tape selvage operating portion of the actuator.

The arch 1 of the loom may support in usual manner the main harness-frames (not shown) and the shaft 2 may be the usual cam-shaft of the loom, the arch at each side of the loom sustaining a suitable bracket 3 on which is mounted a rotatable sheave 4, Fig. 1, for the overhead connection 5 between the two harnesses 6, 7 forming a part of the selvage mechanism at that side of the loom.

I have herein shown a strap or other flexible member 8 connected with the lower end of the harness 7 and carried down around a guide wheel 9 on the loom side and thence up to a rocking lever 10 fulcrumed at 11, a strap 12 connecting the bottom of the front harness 6 and the lever, as shown in Fig. 1, the connection being practically the same as that shown in United States Patent No. 729,046, granted to Draper May 26, 1903.

Oscillation of the lever will operate through the connections to effect the required opposite reciprocation of two harnesses 6 and 7, as will be obvious.

Upon a bracket 13 is rotatably mounted a transmitter, shown as a mutilated gear 14, having diametrically opposite sets of teeth, and a starting tooth 15 midway between each set, with opposite concaved locking extensions 16, adjacent the starting teeth, as clearly shown in Fig. 2.

A wrist-pin 17 on the gear has pivoted on it one end of a link 18 which at its other end is pivoted at 19 to the lever 10, see Fig. 1, to oscillate the latter as the transmitter 14 is rotated.

The mutilated gear or transmitter is mounted below and adjacent the cam-shaft 2, and coöperates with the actuator, the latter imparting intermitting rotary movement to the transmitter.

Herein I have shown the actuator as a disk 20 having on its periphery adjacent one face two diametrically opposite series of teeth 21, the end teeth 22 of each set being made thicker to coöperate with the starting teeth 15, and adjacent the opposite face of

the disk 20 a single series of teeth 23 is formed, opposite one of the series 21. The hub 24 of the actuator is secured to the shaft 2 by a suitable set-screw 25.

Referring to Fig. 3 it will be seen that the teeth 23 are set back somewhat from the face of the disk, while the two series 21 are flush with the other face, but with a clearance between the series 23 and the nearer one of the series 21.

When the actuator is positioned as shown in Figs. 1, 2 and 3, the two series of teeth 21 will intermittingly coöperate with the transmitter 14, imparting thereto one complete revolution for each revolution of the shaft 2, but owing to the arrangement of the teeth the transmitter will be given one half a revolution, followed by a dwell, and then the other half of the revolution will be effected.

At the beginning of each dwell period one of the locking extensions 16 is moved into the position shown in Fig. 1 to coöperate with the circular portion of the disk 20 back of the teeth 21, to thereby lock the transmitter from movement and effect the dwell of the harnesses.

It will be obvious from the foregoing description that the intermittent motion imparted to the transmitter will oscillate the lever 10 to give the one up, one down movement to the selvage harnesses 6 and 7, to thereby weave the plain selvage, a similar movement being given to the harnesses of the selvage-mechanism at the opposite side of the loom by its actuator but in reverse order, so far as concerns its harnesses.

When tape or basket selvage is to be woven the actuator is shifted to the left, Fig. 3, on the shaft 2, to bring the single series of teeth 23 into position to coöperate with the transmitter 14, and by so doing each revolution of the shaft 2 will impart but one-half of a revolution to the transmitter, so that the selvage-harnesses will have imparted to them the required two up, two down motion. After the teeth 23 have left the teeth of the transmitter one of the locking extensions 16 is brought into operative position with relation to the disk 20, the setting back of the teeth 23 from the face of the disk 20 permitting the locking extensions to move into and out of operative position. Thus by a slight shift of the actuator longitudinally on its shaft I am enabled to operate the selvage-mechanism to weave plain or tape selvage as desired, the change being effected by loosening the set-screw 25, shifting the actuator longitudinally on the shaft 2, and then tightening the set-screw.

So far as I am aware it is new to utilize actuating means such as herein shown in a selvage-motion, and to combine two different forms of connected mutilated gears with a third gear common to both, *i. e.*, the transmitter, whereby two entirely different operations are performed by apparatus connected with the transmitter.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a loom, a shed-forming mechanism for each selvage, combined with a rotating actuator for each mechanism, said actuator having means thereon to effect the formation of a shed for weaving either plain or tape selvage, an intermittingly rotated transmitter intermediate an actuator and its shed-forming mechanism, to effect the operation of the latter according to which means upon the actuator is in coöperation with and rotates the transmitter, relative lateral movement of the latter and the actuator rendering operative one or the other of the means thereon, and means to positively lock the transmitter between its intermittent rotative movements.

2. In a loom, a shed-forming mechanism for each selvage, combined with an actuator for each mechanism, each actuator having permanently thereon two sets of gears to effect, respectively, the formation of a shed for weaving plain and tape selvage, a rotatable shaft on which the actuator is mounted to rotate with it and on which it can be shifted longitudinally to bring one set of gears into operative position and render inoperative the other set, and a transmitter intermediate an actuator and its shed-forming mechanism and rotated by that set of gears on the actuator which is operatively positioned by shifting of the actuator.

3. In a loom, separate shed-forming mechanism for each selvage, an actuator for each, each actuator having two opposite series of teeth, and a single series offset laterally therefrom, a mutilated transmitting gear adapted to coöperate with either the single or the double series of teeth on the actuator, to weave tape or plain selvage respectively, and a connection between the transmitting gear and the adjacent shed-forming mechanism.

4. In a loom, a cam-shaft, an actuator longitudinally shiftable thereon and having fixed upon it two sets of gearing to effect the formation of a shed for weaving either plain or tape selvage, a transmitter rotated intermittingly once for each revolution, or for each two revolutions, of the shaft according to which of the two sets of gearing on the actuator is brought into coöperation with the transmitter, to thereby effect the shed formation for plain or tape selvage, respectively, and a pair of selvage-harnesses actuated by the transmitter.

5. In a loom, a rotatable shaft, an actuator longitudinally shiftable thereon and having means thereon to effect the formation of a shed for weaving either plain or tape selvage, a transmitter to coöperate with and be inter-

mittingly rotated by one or the other of said means, locking means connected with the transmitter to coöperate with the actuator and positively lock the transmitter between its rotative movements, and a selvage shed-forming mechanism operatively connected with the transmitter.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH BELAVANCE.

Witnesses:

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J. C. ZÉPHERTOTVIN.